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SHORT TERM WORLD OIL OUTLOOK

AFTER CARACAS

December 29, 1977

OPEC adjourned its semi-annual ministerial conference in Caracas, Venezuela on December 22nd with a declaration that the organization was unable to resolve its intramural oil price controversy. In consequence, OPEC's official "marker" crude oil price (Saudi Arabian Light) will remain unchanged until at least the next ministerial conference which, as of now, is scheduled for June 1978. Contrary to some news reports, this does not mean that all OPEC oil prices have been frozen for this period. Acceptance of the marker crude price merely means that it will continue to provide the base for determining the value of all other OPEC crudes. To the extent to which some of these have been out of line with the marker crude, they are likely to be readjusted in the near future. This will apply particularly to African sweet crudes which have been overvalued relative to the marker crude for some time.

Regarding the price controversy, as is known, a price freeze for all of 1978 was sought by the two largest OPEC producers, Saudi Arabia and Iran. They were supported by most of the Persian Gulf Sheikhdoms. The principal opposition came from the African oil producers and Iraq, although Venezuela and Indonesia also favored an increase but on a more modest scale. The two OPEC leaders were unlikely bedfellows, since each harbors a mistrust for the other, particularly regarding their respective roles in and around the Persian or perhaps the "Arabian" Gulf. Their collaboration on the oil pricing issue, which represents a break with the past, would seem to be tied to the recent announcement

by the Saudi Arabian Government that it will reimpose an 8.5 MM b/d average annual crude oil production ceiling for Aramco beginning January 1, 1978.

The Saudi announcement was apparently intended to temper higher oil price demands by the other OPEC countries by offering them a quid-pro-quo for a price freeze in the form of an assurance that Saudi Arabia's large excess productive potential (currently at least two million b/d) would remain unused for the time being so that if and when any significant increase in export requirements for OPEC oil developed it would be met primarily from sources other than Saudi Arabia. An additional reason for Iran's joining OPEC's price doves may have been its desire to gain political leverage with the U.S. Administration to obtain permission to buy certain advanced military equipment whose exportation has so far been denied.

Our estimates of free world oil supply and demand for 1978, which are presented in this memorandum, indicate that Saudi Arabia will probably not be required to produce more than 8.2 MM b/d of oil next year, some 0.5 MM b/d less than the Government imposed production ceiling.* This assumes production increases occur in Iraq and Iran, which essentially offset a decline in Saudi production which was 9.1 million b/d in 1977. While our estimates indicate that the reimposition of the Saudi production ceiling will not create supply tightness in the world oil market in 1978, the extent of flexibility in the market will be restricted by the Saudi production ceiling.

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*The Government ceiling is 8.5 MM b/d on Aramco crude oil production. NGL production of about 240,000 b/d is reportedly excluded from the Saudi production ceiling.

Required OPEC oil production in 1978 is forecast to be about 31.4 MM b/d, approximately the same as in 1977. Free world oil demand is forecast to increase 3.6 percent or by 1.8 MM b/d in 1978. Essentially all of this demand increase is expected to be met from non-OPEC oil supplies, mainly the United States, Western Europe and Mexico.

OPEC oil producing capacity is estimated to be about 39.2 MM b/d at the beginning of 1978. This level refers to maximum sustainable production for 90 days without regard to government restriction. Usable oil producing capacity, which takes into account officially imposed ceilings on crude production in Saudi Arabia (8.5 MM b/d), Kuwait (2.00 MM b/d), Abu Dhabi (1.35 MM b/d) and Venezuela (2.3 MM b/d), is estimated to be approximately 32.7 MM b/d or only 1.3 MM b/d more than required OPEC production in 1978. Conceivably, this could lead to some supply tightness later in the year if the growth in world demand should significantly exceed our forecast or non-OPEC production falls significantly below it.

Nevertheless, 1978 is likely to be a year when world oil supply and demand will stay roughly in balance at existing prices. This view is based in large part on the high level of commercial inventories currently in existence in the consuming countries and the likelihood that required OPEC production will be significantly lower in the first half of the year than in the second half due to a lower level of economic activity and smaller volumes of U.S. crude oil imports for the Strategic Petroleum Reserve. This would allow OPEC production to rise above the

imposed ceilings in the second half of the year but still remain below them for the year as a whole.

The relatively good supply situation in 1978 could give way to some tightness in 1979. Non-OPEC oil production is expected to increase by around 1.0 MM b/d in 1979. Consequently, a world oil demand increase of 3.5% in 1979 would require an OPEC production level of 34.2 MM b/d or only 0.5 MM b/d less than current estimated usable capacity. In this situation, the prospects for an OPEC price increase at the end of 1978, if not before, would tend to appear very likely.

Thus, the inaction by OPEC at Caracas in the matter of prices should not be taken as evidence that the cartel's ability to raise prices has come to an end. Rather, the establishment of the Saudi production ceiling may free OPEC from imposing future price increases. Instead it could well be that the interaction of world oil supply/demand, within the imposed production ceiling, will begin, possibly in late 1978 or early 1979, to signal the need for upward adjustments in world prices, although the actual increases will continue to be administered by OPEC in an ad hoc fashion.

Free World Oil Consumption

Free world oil consumption is estimated to have increased by 4.2 percent or about 2.0 MM b/d in 1977 (see Table I). The United States, whose oil use will have risen by about 6.0 percent, has accounted for over one-half of the rise in world oil consumption in 1977. In contrast, oil consumption in Western Europe has risen only slightly, barely registering a 1.0 percent growth over 1976 consumption. The divergent

growth in these two areas can in large part be explained by the relatively lower economic growth in Western Europe during 1977, which when measured in terms of the growth in real GNP averaged about 2.5 percent or nearly half the real GNP growth in the United States. Another contributing factor is the growth in natural gas consumption in Western Europe in 1977 while U.S. gas sales have probably shown a modest decline.

In both Western Europe and Japan, 1977 oil consumption has been below the peak levels experienced in 1973; U.S. oil consumption has been some 6.7 percent higher. On balance, 1977 free world oil consumption will be about 4.4 percent or 2.1 MM b/d greater than the 1973 peak level.

We have forecast a free world oil consumption increase of 3.5 percent in 1978. The United States will account for over one-third of the volumetric increase, with its demand expected to increase 3.5 percent. In Western Europe oil consumption is forecast to increase 1.5 percent in 1978; and in Japan, 4.4 percent. Oil consumption outside the major industrialized countries is expected to rise 6.0 percent in 1978 or at the same rate as in 1977. OPEC oil consumption which is included in this latter group is expected to grow at a faster rate than the group as a whole.

Changes in Strategic and Commercial Inventory Levels

We have adjusted free world oil consumption to arrive at required oil supplies in 1978 by taking into account both an expected decline in commercial stocks held in major consuming countries during the year and

additional crude oil imports, particularly in the United States, for strategic storage. Imports for strategic storage are expected to more than offset the anticipated commercial stock draw down during 1978; consequently total free world oil supply requirements will be 0.2 MM b/d above the volume necessary to meet actual consumption. The required supplies will be met from a combination of non-OPEC oil production, net oil exports from Communist Countries and OPEC production, the latter providing the balance in the world oil market.

The U.S. Government is currently planning to import over 660,000 b/d of crude oil during 1978 for the Strategic Petroleum Reserve (SPR). Imports are supposed to begin at a rate of 265,000 b/d in the first quarter of 1978, increasing to around 925,000 b/d in the last quarter of the year. By the end of 1978, an SPR target level of 250 million barrels is planned. It is unlikely that the Government will be able to achieve its targeted storage level due to lack of required infrastructure at various of the storage facilities. We have assumed that about 150 million barrels will be added to the SPR in 1978, requiring average crude oil imports of 0.4 MM b/d for the year.

In contrast to the rising U.S. requirements for strategic stocks, commercial oil inventories are likely to decline during 1978 in both the United States and elsewhere. Currently, commercial oil inventories in major industrialized countries are estimated to be nearly 200 million barrels above year ago levels. These high levels have been the cause for the so-called glut or over supply which has characterized the world

oil market over the last few months. This situation should be distinguished from surplus oil in the ground or excess producing capacity of OPEC countries (of which more later).

During the first half of 1978 commercial oil inventories are expected to be drawn down as excess stocks are worked off. However, they could start to rise again either in June or towards the end of the year as a result of an anticipated OPEC price increase.

Altogether, the adjustments to free world oil consumption for changes in the level of both strategic and commercial inventories will result in a net increase of 0.2 MM b/d in required oil supplies in 1978, which together with actual consumption requirements will have to be met from available free world oil supplies.

Free World Oil Supplies

Non-OPEC oil production is expected to be 19.4 MM b/d in 1978, about 1.8 MM b/d greater than it was in 1977. This increase is essentially identical to that forecast for free world oil demand. Hence, required OPEC production in 1978 is expected to be approximately equal with the estimated 1977 OPEC production level of 31.4 MM b/d.

Western European oil production is forecast to increase some 0.6 MM b/d in 1978, with production in the United Kingdom and Norway expected to average 1.2 and 0.5 MM b/d respectively. Crude oil production in these two countries was about 1.0 MM b/d during the first nine months of this year. U.S. oil production is also expected to increase in 1978 as Alaskan North Slope output reaches 1.2 MM b/d towards the end of the

first quarter of 1978; it is currently averaging over 700,000 b/d.

In the past two years, the free world has received some 1.1 MM b/d of its required oil supplies from Communist Countries. This level is expected to continue in 1978.

The balance of required oil supplies will have to be met by OPEC production which is expected to be 31.4 MM b/d, some 0.5 MM b/d greater than 1976 production but, as previously mentioned, about on par with 1977 production. Higher oil demand than we have anticipated or lower production from non-OPEC sources would both require corresponding increases in OPEC production, which represents the world's major incremental oil supply source.

Table II shows our estimates of OPEC oil production by country for 1978. The following principles guided the production allocation among the countries:

(1) Reported productive capacity in each of the OPEC countries (see Table III);

(2) Government imposed production ceilings (if any);

(3) Production trends during the last few years;

(4) Market forces affecting the demand for different quality crude oils; and

(5) Saudi Arabia is considered the balance supplier within OPEC up to its announced production ceiling, making up the difference between required OPEC production and the production in other OPEC countries.

Based on this analysis, Saudi Arabia may be required to produce around 8.2 MM b/d in 1978, some 0.5 MM b/d less than the Government's official ceiling on Aramco crude production plus unrestricted NGL output.

Required OPEC production in 1978 is about 7.8 MM b/d less than OPEC's reported productive capacity and 1.3 MM b/d less than OPEC's usable capacity, taking account of official production ceilings. Thus OPEC's usable capacity is not likely to limit the availability of oil to meet the free world's oil requirements next year.

Table I

FREE WORLD OIL SUPPLY AND DEMAND,
1976 AND ESTIMATES FOR 1977 AND 1978

(Million Barrels Per Day)

	1976	1977	1978	% Change 1977/1976	% Change 1978/1977
Oil Consumption					
United States*	16.98	18.00	18.63	6.0	3.5
Canada	1.79	1.82	1.87	1.7	2.7
Western Europe	14.34	14.48	14.70	1.0	1.5
Japan	5.20	5.42	5.66	4.2	4.4
Other	9.63	10.21	10.82	6.0	6.0
	47.94	49.93	51.68	4.2	3.5
Strategic Storage, Inventory and Other Adjustments**	0.50	0.16	0.20	-32.0	25.0
Total Oil Requirements	48.44	50.09	51.88	3.4	3.6
Oil Supplies***					
Non-OPEC					
United States	9.72	9.89	10.50	1.7	6.2
Canada	1.61	1.65	1.63	2.5	-1.2
Other Western Hemisphere	2.01	2.21	2.50	10.0	13.1
Western Europe	0.91	1.50	2.10	64.8	40.0
Other Eastern Hemisphere	2.17	2.37	2.67	9.2	12.7
	16.42	17.62	19.40	7.3	10.1
Net Exports From Communist Countries	1.10	1.10	1.10	-	-
OPEC Production	30.92	31.37	31.38	1.5	-
Total Oil Supply	48.44	50.09	51.88	3.4	3.6

*Excludes processing gain and crude oil required for the Strategic Petroleum Reserve (SPR) program.
**Includes U.S. SPR crude requirements, changes in commercial inventories, crude losses and statistical discrepancies.
***Includes NGL's

Table II

OPEC OIL PRODUCTION 1976 AND ESTIMATES FOR 1977 AND 1978

(Million Barrels Per Day)

OPEC Countries	1976	1977	1978	% Change 1977/1976	% Change 1978/1977
Middle East					
Saudi Arabia	8.54	9.10	8.22	6.6	-9.7
Kuwait	1.95	1.92	2.00*	-1.5	4.2
Neutral Zone	0.46	0.36	0.36	-21.7	-
United Arab Emirates	1.94	2.02	1.76*	4.1	-12.9
Qatar	0.49	0.44	0.45	-10.2	2.3
Iraq	2.28	2.26	2.60	-0.9	15.0
Iran	5.92	5.60	6.10	-5.4	8.9
	21.58	21.70	21.49	0.6	-1.0
Africa					
Libya	1.96	2.11	2.20	7.7	4.3
Algeria	1.02	1.07	1.07	4.9	-
Nigeria	2.07	2.10	2.20	1.4	4.8
Gabon	0.22	0.23	0.23	4.5	-
	5.27	5.51	5.70	4.6	3.4
Other					
Venezuela	2.36	2.29	2.29*	-3.0	-
Indonesia	1.52	1.69	1.72	11.2	1.8
Ecuador	0.19	0.18	0.18	-5.2	-
	4.07	4.16	4.19	2.2	0.7
Total OPEC	30.92	31.37	31.38	1.5	-

*Government production ceiling

Table III

OPEC OIL PRODUCING CAPACITY, 1977
(Million Barrels Per Day)

Middle East	Year End 1977 Producing Capacity
Saudi Arabia	11.50
Kuwait	3.00
Neutral Zone	0.68
United Arab Emirates	2.45
Qatar	0.65
Iraq	3.10
Iran	6.85
	28.23
Africa	
Libya	2.50
Algeria	1.10
Nigeria	2.40
Gabon	0.25
	6.25
Other	
Venezuela	2.70
Indonesia	1.80
Ecuador	0.22
	4.72
Total OPEC	39.20

NOTE: PRODUCING CAPACITY IS DEFINED AS MAXIMUM SUSTAINABLE PRODUCTION FOR 90 DAYS WITHOUT REGARD TO GOVERNMENT RESTRICTION.

Source: Petroleum Intelligence Weekly